

A cross-sectional view of a semiconductor device during a heating process. The device consists of a substrate 10 with a thin layer 10a on top. A central rectangular region is defined by dimensions h (width) and d (height). This region is surrounded by a patterned layer 10b. A large upward arrow labeled "HEATING" is positioned below the device. On the left and right sides, there are contact pads 50 and a layer 20.

A cross-sectional view of a semiconductor device during a heating process. The device features a substrate 10 with a series of rectangular openings 10a. The bottom surfaces of these openings are labeled 10b. A large upward-pointing arrow labeled "HEATING" is positioned below the substrate, indicating the direction of heat application. The top surface of the substrate is labeled 20.

A cross-sectional view of a substrate 10, which is a multi-layered structure. It features a series of rectangular cavities 10a and vertical channels 10b. A large upward-pointing arrow labeled "COOLING" indicates the direction of cooling from below. The top surface is labeled 20.

A cross-sectional view of a semiconductor device. The device features a substrate 10 with a series of rectangular protrusions 10a. The top surface of the device is stepped, with the highest points labeled 20. The side walls of the protrusions are labeled 10b. An upward-pointing arrow is located in the center of the device, indicating a direction of process or growth. A label 20a points to the top surface of one of the protrusions 10a.

FIG.2 A

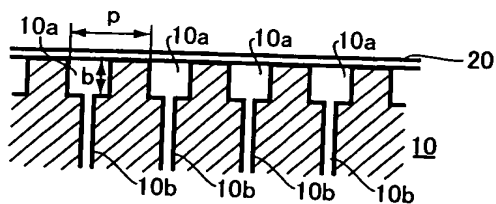


FIG.2 B

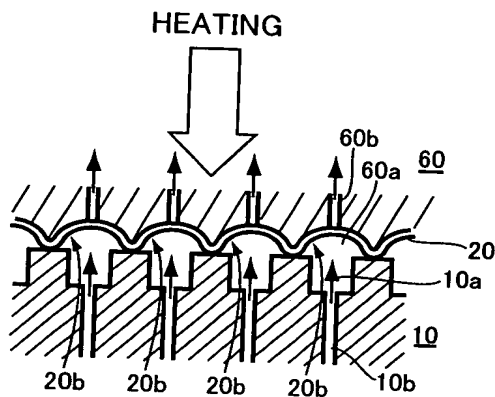


FIG.2 C

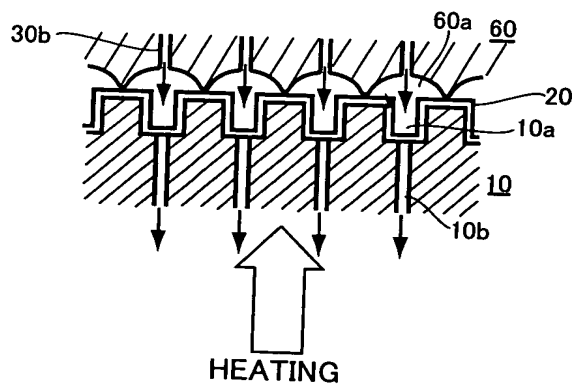


FIG.2 D

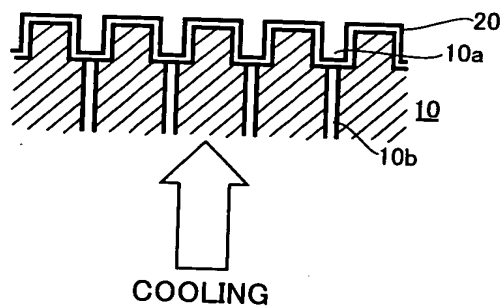


FIG.2 E

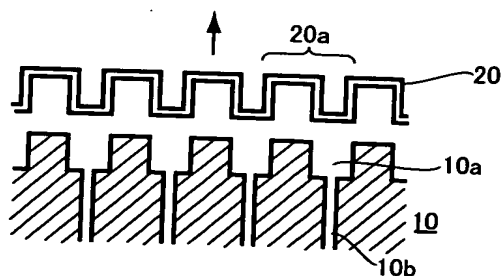


FIG.3 A

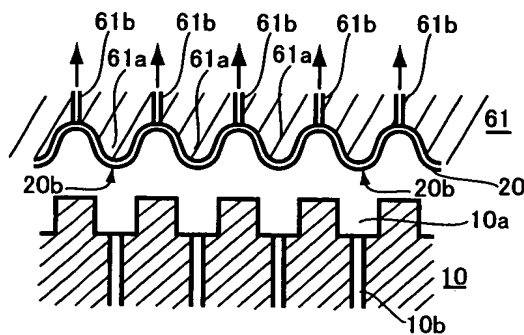


FIG.3 B

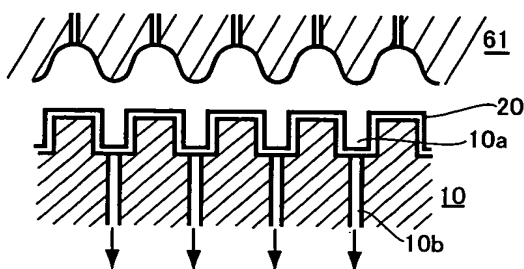


FIG.4 A

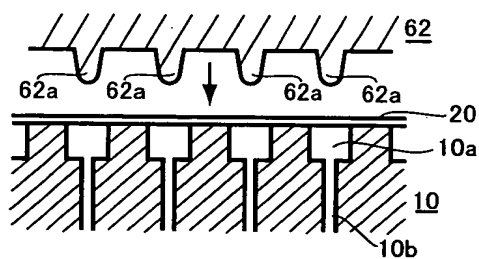


FIG.4 B

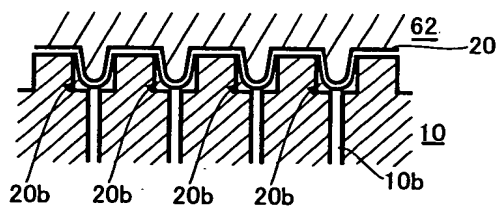


FIG.4 C

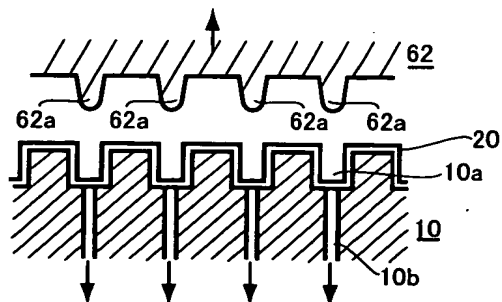


FIG.5 A

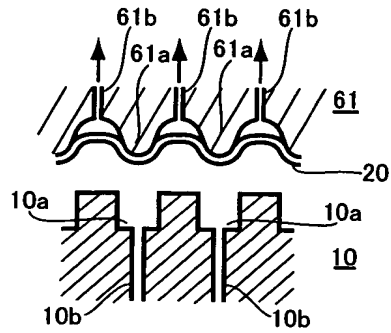


FIG.5 B

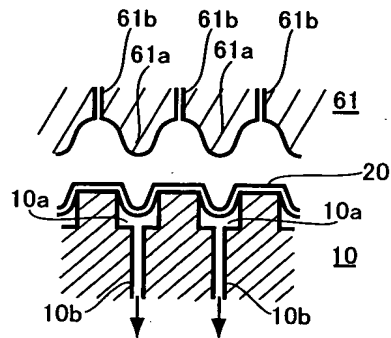


FIG.5 C

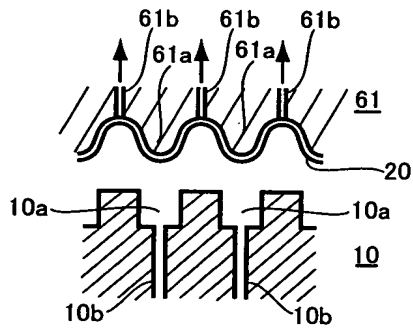


FIG.5 D

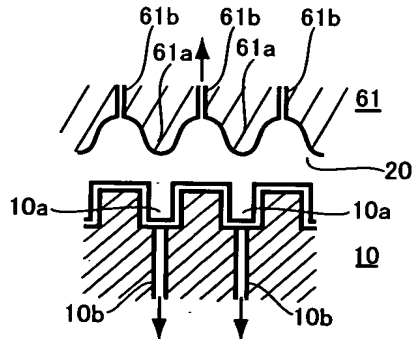


FIG.6

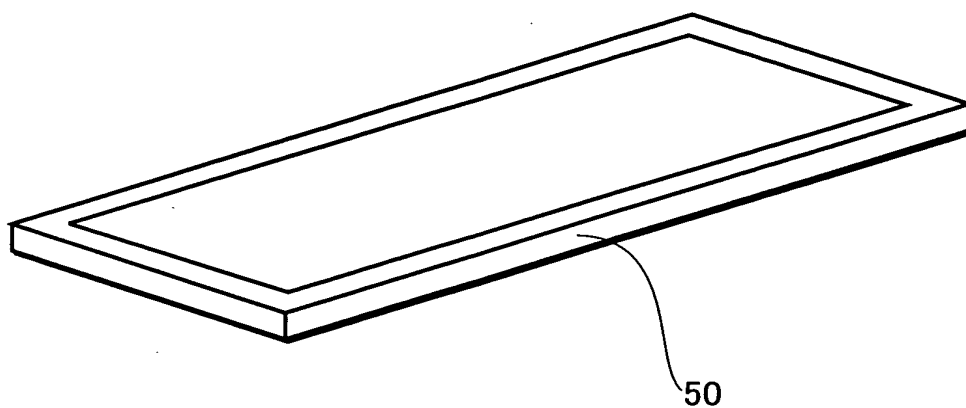


FIG. 7

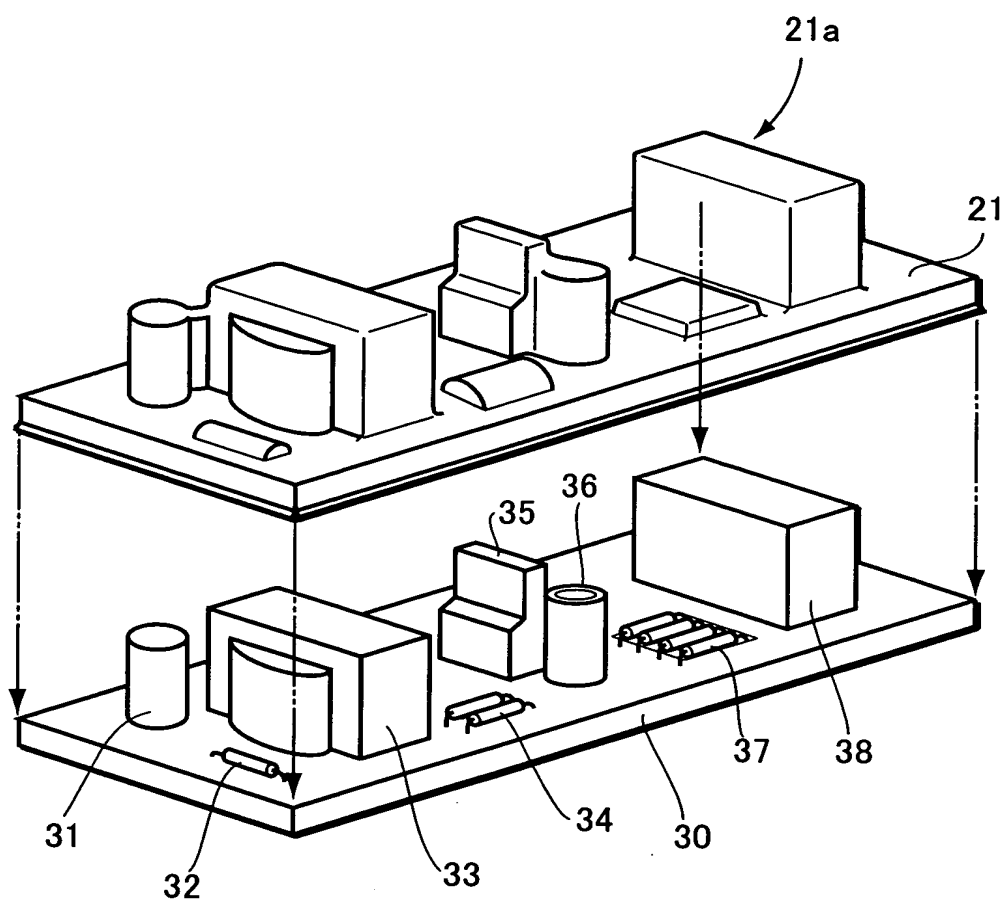


FIG.8

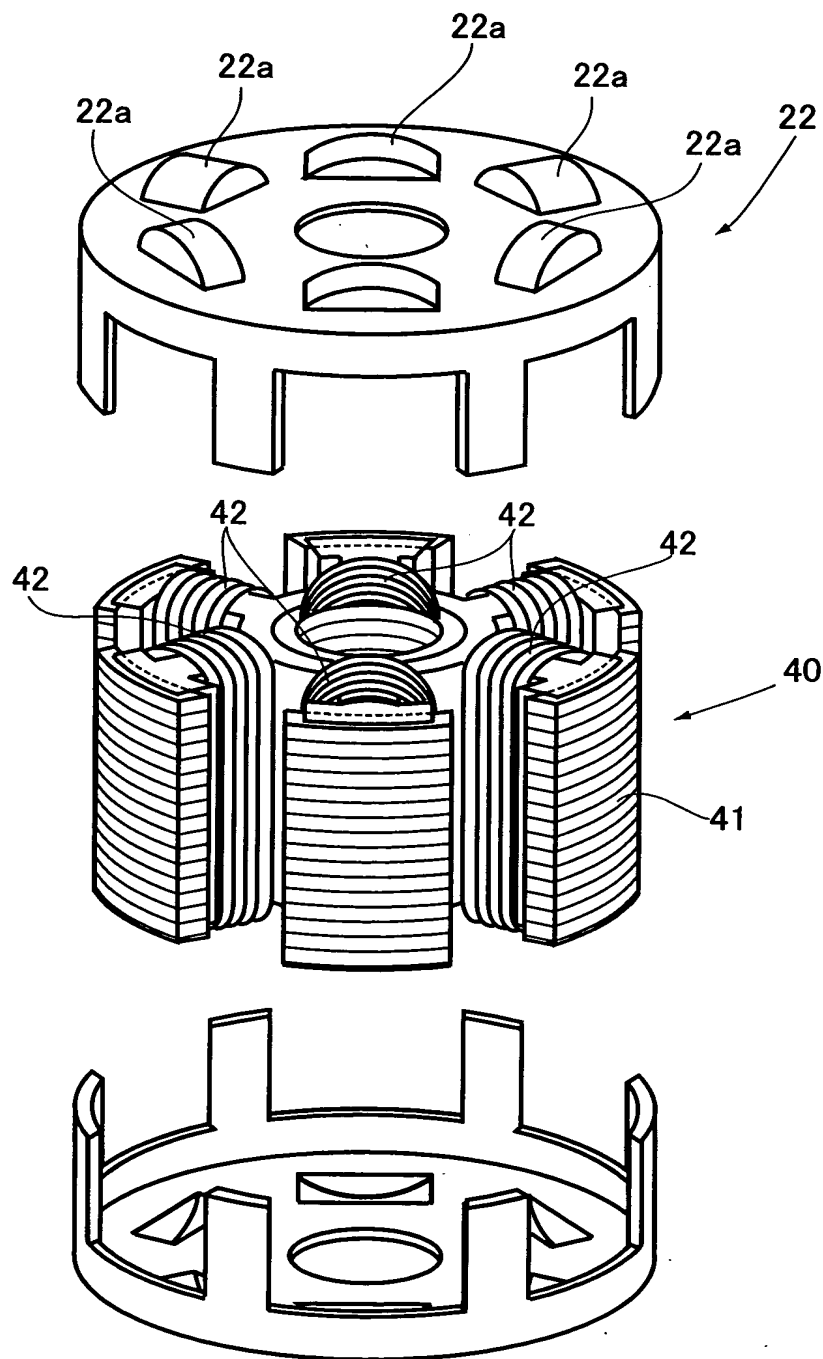


FIG.9

